CLAIMS

- 1. A nerve regeneration accelerator, which comprises a fatty acid compound excluding retinoic acid and a prostaglandin compound, a salt thereof or a prodrug thereof.
- 2. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is an unsaturated fatty acid compound.
- 3. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is a saturated fatty acid compound.
- 4. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is a branched chain fatty acid compound.
- 5. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is a linear or branched chain fatty acid compound having from 4 to 20 carbon atoms.
- 6. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is represented by formula (I):

$$R^{4} \stackrel{R^{2}}{\longrightarrow} R^{3} \qquad (I)$$

wherein R¹ represents hydroxyl; R² and R³ each independently represents (a) hydrogen, (b) chlorine, (c) C3-10 alkyl, (d) C3-10 alkenyl, (e) C2-10 alkoxy, (f) C2-10 alkylthio,

- (g) C3-7 cycloalkyl, (h) phenyl, (i) phenoxy, (j) (C2-10 alkyl substituted with one or two chorine atom(s))-CH₂-, (k) (C1-5 alkyl substituted with one or two substituent(s) selected from C1-4 alkoxy, C3-7 cycloalkyl, phenyl and phenoxy)-CH₂-, (l) (C1-10 alkyl in which one carbon atom is substituted with 1 to 3 fluorine atom(s))-CH₂-, or (m) oxidized C3-10 alkyl, or R² and R³ are taken together to represent C3-10 alkylidene; and R⁴ represents C2-3 alkyl or oxidized C2-3 alkyl.
- 7. The nerve regeneration accelerator according to claim 6, wherein the fatty acid compound is (1) 2-propyloctanoic acid, (2) (2R)-2-propyloctanoic acid, (3) (2S)-2-propyloctanoic acid, (4) 2-propylpentanoic acid, (5) (2R)-7-oxo-2-propyloctanoic acid, (6) (2R,7R)-7-hydroxyl-2-propyloctanoic acid, (7) (2R,7S)-7-hydroxyl-2-propyloctanoic acid, or (8) (2R)-8-hydroxyl-2-propyloctanoic acid.
- 8. The nerve regeneration accelerator according to claim 7, wherein the fatty acid compound is (2R)-2-propyloctanoic acid.
- 9. The nerve regeneration accelerator according to any one of claims 1 to 8, which is a nerve tissue regenerator or a neural function regenerator.
- 10. The nerve regeneration accelerator according to any one of claims 1 to 8, which is an accelerating agent for grafting, differentiating, proliferating and/or maturing a stem cell, a nerve precursor cell or a nerve cell.
- 11. The nerve regeneration accelerator according to claim 10, wherein the stem cell is an embryonic stem cell, a myeloid stem cell or a nerve stem cell.

- 12. The nerve regeneration accelerator according to claim 10, wherein the stem cell, the nerve precursor cell or the nerve cell is an endogenous cell.
- 13. The nerve regeneration accelerator according to claim 10, wherein the stem cell, the nerve precursor cell or the nerve cell is a transplant cell.
- 14. The nerve regeneration accelerator according to any one of claims 1 to 8, which induces a nerve cell from a mesenchymal cell, a bone marrow stromal cell or a glia cell.
- 15. The nerve regeneration accelerator according to claim 14, wherein the glia cell is an astrocyte.
- 16. The nerve regeneration accelerator according to any one of claims 1 to 8, wherein the nerve is a central nerve or a peripheral nerve.
- 17. The nerve regeneration accelerator according to claim 16, wherein the central nerve is a cerebral nerve, a spinal nerve or an optic nerve.
- 18. The nerve regeneration accelerator according to claim 16, wherein the peripheral nerve is a motor nerve or a sensory nerve.
- 19. The nerve regeneration accelerator according to any one of claims 1 to 8, which is used for culture of a nerve stem cell for transplant, a nerve precursor cell for transplant or a nerve cell for transplant.

- 20. The nerve regeneration accelerator according to any one of claims 1 to 8, which is a neurotrophic factor-like agent.
- 21. A method for accelerating nerve regeneration in a mammal, which comprises administering to a mammal an effective amount of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof.
- 22. A method for culturing a cell for transplant, which comprises adding an effective amount of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof to a medium comprising a nerve stem cell for transplant, a nerve precursor cell for transplant or a nerve cell for transplant.
- 23. Use of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof for the manufacture of a nerve regeneration agent.
- 24. Use of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof for the manufacture of an additive agent for culture of a nerve stem cell for transplant, a nerve precursor cell for transplant or a nerve cell for transplant.
- 25. A medicament which comprises a combination of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof with at least one selected from an acetylcholine esterase inhibitor, a nicotinic receptor regulator, a β secretase inhibitor, a γ secretase inhibitor, a β amyloid protein aggregation inhibitor, a β amyloid vaccine, a β amyloid protease, a brain function activator, a dopamine receptor agonist, a monoamine oxidase inhibitor, an anticholinergic drug, a catechol-O-methyltransferase inhibitor, a drug for treating amyotrophic lateral sclerosis, a drug for

treating hyperlipidemia, a drug for treating abnormal behavior and/or poriomania accompanied with progress of dementia, an apoptosis inhibitor, a drug for accelerating nerve differentiation and/or regeneration, an antihypertensive drug, a drug for treating diabetes, an antidepressant drug, an antianxiety drug, a nonsteroidal anti-inflammatory drug, a disease modifying antirheumatic drug, a TNF inhibitor, a MAP kinase inhibitor, a steroid drug, a sex hormone derivative, parathyroid hormone and a calcium acceptor antagonist.